

CLAIMS

1. A pneumatic tire comprising
a tread portion,
a pair of sidewall portions,
a pair of bead portions each with a bead core and a bead apex therein,

a carcass comprising a ply of cords extending between the bead portions through the tread portion and sidewall portions and turned up around the bead core in each said bead portion from the inside to the outside of the tire so as to form a pair of turned up portions and a main portion therebetween,

said bead apex made of hard rubber disposed between the main portion and turned up portion and extending radially outwards from the bead core, a length (LA) of the bead apex between the radially inner end and radially outer end thereof being in a range of from 0.1 to 0.25 times the section height (H) of the tire,

a reinforcing cord layer disposed along the axially inside of each said turned up portion, the reinforcing cord layer having a radially outer end (FU) which is positioned radially outside the radially outer end (BU) of the bead apex but radially inside the maximum tire section width point (M), and a radially inner end (FD) which is positioned radially outside the radially outer end of the bead core but radially inside the radially outer end (BU) of the bead apex,

a length (LB) of the reinforcing cord layer between the radially inner end and the radially outer end thereof being in a range of from 1.2 to 2.0 times said length (LA) of the bead apex,

the sidewall portions having a minimum thickness (Wmin) being in a range of not more than 0.5 times a maximum thickness

(W_{max}) of a region where the reinforcing cord layer exists.

2. The pneumatic tire according to claim 1, wherein
the carcass is composed of a single ply of radially
arranged cords.
3. The pneumatic tire according to claim 1 or 2, wherein
a distance (α) between the outer end (FU) of the
reinforcing cord layer and the radially outer end (BU) of the bead
apex along the reinforcing cord layer is not less than 10.0 mm.
4. The pneumatic tire according to claim 1 or 2, wherein
a radial distance (K) of the radially inner end (FD) from
the radially outer end (BU) of the bead core is set in a range of
from 0.1 to 0.5 times the length (LA) of the bead apex.
5. The pneumatic tire according to claim 1, wherein
the ratio (LB/LA) of the length (LB) of the reinforcing
cord layer and the length (LA) of the bead apex is in a range of
not less than 1.5 but not more than 1.8.
6. The pneumatic tire according to claim 1, wherein
said maximum thickness (W_{max}) occurs near the radially
outer end (BU) of the bead apex, and
said minimum thickness (W_{min}) occurs between the radially
outer end (FU) of the reinforcing cord layer and the maximum tire
section width point (M).